Practice Test: Atomic Structure, P,N,E, Isotopes, Electron Configuration, etc.

1.

Species Atomic Mass Atomic No. Protons Neutrons Electrons Charge

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| deuterium |  |  |  |  |  |  |
|  |  | 11 |  | 12 |  | + 1 |
|  |  |  | 15 | 15 | 18 |  |
| 40 + 2  Ca  20 |  |  |  |  |  |  |

2. Mass 30 29 28 27 26 25 24 23

Sample A

Abundance 11.17 10.13 78.79

a. What are the atomic masses of the isotopes in spectrum A ? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. Based on the experimentally obtained values of atomic mass and percent, calculate the average mass of this element. Show your work.

c. What are the name and symbol of this element? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d. What are the symbols including superscripts and subscripts of the isotopes of this element? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Explain in **detail** Rutherford’s experiment and its significance to the model of the atom. Include a labeled diagram!!!

4. Naturally occurring boron consists of 10B(10.013 amu) and 11B (11.009 amu). The atomic mass of boron is 10.811 amu. What is the relative abundance of each of the two isotopes?

5. Electron Arrangement

Long Method Energy Level Energy Level Electron Configuration Orbital Notation Electron Dot

Notation Diagram

1. Calcium

2. Gold

Short Method

Noble Gas Core(kernel)

5. Strontium X X

6. Uranium X X